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## **Studies on the production of *Paecilomyces tenuipes*, entomopathogenic fungus**

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*Cordyceps* is known as a powerful tonic which gives the body increased vitality and energy and has significant additional benefits. About 300 species of entomopathogenic fungi have been published worldwide and their pharmacological active have been widely recognized for a long time. Korean isolate of *Paecilomyces tenuipes* was inoculated into *bombyx mori* and successfully reproduced, of which products were proved to strengthen immune system, anti-fatigue and anti-cancer activity. Therefore, this study was initiated to characterize Korean isolate of *Paecilomyces tenuipes* and find the optimal condition for cultivation and eventually to set up the mass production system.

*Paecilomyces tenuipes* develops 1–5 synemata with a large amount of conidia in the upper part. Colonies on potato dextrose agar (PDA) show 32 mm diam. growth in 14 days at 25°C and pale yellow with reverse yellowish white color. Conidia are ellipsoidal to ovoid in shape and 2.9–6.6 × 1.5–2.5µm in size. Phialides are grouped in 3–4 whorls, clavate and 4.0–6.6 × 2.0–2.2 µm in size. In the selecting test for medium, the growth rate was higher in all three types of silkworm larva agar (SLA-A, B, C) than in PDA. Among them SLA-A showed the highest growth, 61.8±1.25 mm in diameter which doubled that of PDA. In silkworm larva broth, the higher the spin speed produced the smaller diameter of hyphal clumps. Net weight was the highest in over 150 rpm and 12L/12D with 6 g of 6 mm bead as 1.322g. The production of conidia on brown rice agar was the greatest in pH 5.0 with temperature change from 24°C to 20°C as 4.3±0.35 ×10<sup>8</sup> conidia/ml. Synemata was formed most excellent in the dark with a 12 hr-alternative 12°C and 18°C as 32.5±0.8 mm and 56.7 in count.